

CUR Focus on the Web

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Student and Faculty Perceptions of the National Conference on Undergraduate Research (NCUR)

The dissemination of the new knowledge one discovers and creates is an essential piece of an undergraduate research experience. One of the longest-running and best-known undergraduate research conferences is the National Conference on Undergraduate Research (NCUR). It was established in 1987 and is dedicated to promoting undergraduate research, scholarship, and creative activity in all academic fields of study by sponsoring an annual conference for students (www.ncur.org). NCUR serves as the only national conference that is open to the work of undergraduates from every academic discipline and all types of institutions (ie, community colleges, primarily undergraduate teaching institutions, liberal arts colleges, research-intensive universities).

The primary activities of the conference are the undergraduates' presentations in oral, poster, exhibit, and performance formats. In addition, each year three to four plenary sessions are scheduled at which nationally known experts are invited to give hour-long presentations about topics related to inquiry in their fields.

Student abstracts for research posters, oral presentations, visual-art exhibits, and performances are submitted four months prior to the conference. Abstracts are reviewed by faculty panels assembled by the host institution; those students whose abstracts are deemed acceptable present their work at the annual April meeting and are invited to submit their work to the Proceedings of the National Conference. Over the past five years (2004-2009), 84.7 percent of submitted abstracts were accepted for presentation, exhibit, or performance.

A variety of individuals attend NCUR: student presenters, non-presenting student co-authors, other interested students, faculty mentors, and administrators from a variety of campuses. In the past three years, more than 6,000 undergraduates, faculty members, and administrators from more than 450 colleges and universities attended the annual three-day event.

We surveyed the attendees for three consecutive years—2007, 2008, and 2009—to gain insights into what they felt they had gained from NCUR in order to make data-driven decisions about planning for future conferences. Three weeks after the conclusion of each annual NCUR meeting, all registered individuals were sent an email with a link to an online, 17-item sur-

vey about their experience. The survey, with both open-ended and close-ended questions, queried respondents about the NCUR conference in general, as well as asking some specific questions related to NCUR's host sites (Dominican University in California in 2007, Salisbury University in Maryland in 2008, and the University of Wisconsin at LaCrosse in 2009). This article reports findings about participants' general experiences at NCUR, omitting questions and responses specifically related to the host sites. All responses to the survey were kept completely anonymous.

Students' Responses

More than 1,800 (~30 percent) student attendees completed the survey. Although the primary focus of the conference is student presentations, the NCUR host institutions often invest considerable time and resources to identify and secure plenary speakers each year, but our data shows that nearly 50 percent of students did not attend any plenary presentations. Plenary speakers have included environmental scientist Tyrone Hayes; Rudy Bednar, a director and producer at ABC News; and Grammy award-winning musician Bill Miller. Of those students who did attend a plenary session, the highest number (30 percent) attended the first plenary of the conference (usually scheduled on Thursday morning to "kick off" each NCUR conference). The final plenary (usually on Saturday morning) attracted the least, with fewer than 20 percent of students attending. In 2009 we added a question to the survey asking students why they did not attend the plenary presentations. Forty-five percent indicated they used that time to prepare or practice their presentations, while 22 percent indicated they were not interested in the topics. Those students, faculty members, and administrators who did attend the plenary sessions, however, reported being extremely pleased with them. Comments included:

"Bill Miller was amazing. A life-changing experience."

"Jack Horner had a fantastic presentation, and my entire group talked about it for the rest of the afternoon."

"Melba Beals was simply outstanding and inspiring!"

"Tyrone Hayes...absolutely mind blowing. Incredibly awesome."

Students spent the majority of their time at the conference attending each other's presentations (Table 1). More than 30 percent of students attended seven or more oral presentations; this equates to more than two hours of listening to other students present their work. The majority of students (>50 percent) engaged in discussions with poster presenters, but fewer than 15 percent of students attended a visual arts presentation or performance. This is not surprising, however, since such exhibits and performances made up only about 3 percent of the presentations.

Nearly 60 percent of students agreed or strongly agreed with the statement: "I found the questions that people asked of me about my research/creative scholarship were challenging and/or helpful." Twenty-seven percent of students reported meeting more than seven new people from their own institution, and 24 percent reported meeting more than seven new people from different institutions.

Although nearly 80 percent of student respondents indicated they planned to attend graduate school, only 35 percent of them attended the graduate fair, where they could speak with representatives of graduate programs and receive recruitment materials. The most frequent reasons given for not attending the graduate fair included having already decided to attend a particular graduate school, stating that the timing was bad (for example, conflicting with the timing of their own or a friend's presentation), or not being aware of the fair.

NCUR differs from conferences sponsored by discipline-based societies in that it is multidisciplinary and only undergraduate students are allowed to present their work. Students value these aspects of the conference, as evidenced by the following comments:

"Attending poster sessions was beneficial. I learned how my field of study could coincide with other majors and solve some energy issues we experience in America. I also came up with some new ideas for inventions".

"The interdisciplinary nature of the conference allowed me to explore a cross-section of my interests in different fields."

"Being able to present in front of peers other than [in] my discipline was the highlight of the conference for me. The questions were completely different than what I was used to and that was really interesting for me."

"Presenting to people who had NO idea what I was talking about brought me back to the beginning, with how to explain my research and provoke questions of people who are not schooled in my own discipline."

Faculty, Administration Responses

Nearly one-third of the 418 faculty and administrators who attended the conference during the years of the study completed the surveys, with faculty members accounting for nearly 70 percent of the responses. For 44 percent of the faculty and administrators responding, the conference was the first NCUR event they had attended, but more than 94 percent indicated they would attend again, and 92 percent said that they would recommend the NCUR conference to their colleagues and students.

Twenty-five percent of the faculty and administrators who responded reported attending visual and performing arts presentations. Faculty and administrators attended more poster and oral presentations than their students, with 58 percent of

Table 1. Student attendance at different presentations

How many presentations did you attend?				
Answer Options	Posters	Oral	Visual Art Exhibits	Performances
0	22.1%	13.3%	17.7%	84.2%
1-2	20.0%	12.3%	16.1%	11.3%
3-4	22.9%	22.6%	22.7%	3.3%
5-6	18.2%	18.1%	18.1%	1.3%
7+	16.8%	33.7%	0.0%	0.0%

them reporting attending more than several oral presentations, compared with 33.7 percent of students responding. This group reported that nearly 50 percent of them talked with seven or more students about their posters, and nearly 80 percent reported that the questions asked of their students were challenging and/or helpful.

Faculty members were more likely than their students to attend the plenary presentations, with nearly 70 percent attending at least one plenary. Their comments included:

“Overall the plenaries were excellent—among the best I have heard. Particularly good in directing message to students.”

“Greatly inspiring of how students (and faculty) can make a difference with their research.”

“The three speakers I saw were all quite different in terms of personality, presentation and topics. One was amazing, he really hit the mark; the second was unorganized, and I thought, unclear. The third speaker was great; she provided lots of dense information, which kept me thinking for days.”

Although the primary focus of the conference is student presentations, at lunchtime NCUR schedules presentations by members of the Faculty and Administrator Network at which peers present information about how they run and assess their undergraduate research programs. Attendance at these sessions is variable: Some years there has been standing room only, while at other sessions there are few attendees. Some faculty and administrators indicated that they did not know about these events, while others said they preferred to mingle informally with their students and with students and colleagues from other campuses.

The responses to the open-ended questions from faculty members who had attended one or more NCUR conferences suggested that they believed the experience was particularly valuable for their students because it exposed them to other disciplines and creative activities. Faculty comments included:

“One of the most illuminating presentations I went to was outside of my discipline. I talked with a student whose poster was about the use and development of symbolism in fiction novels. I had never considered this was a craft, one to be researched—that different writers use symbolisms in different ways. I also learned that the student was

being mentored to learn how to practice and hone their [sic] skills in this method.”

“The best presentation my students and I went to was by a computer science/music major from another campus. His presentation was on the development of a musical score for a video game—he analyzed the different scores of other video games for tempo, tone and other musical notations and used a computer program to help create a new score based on his work. During the question and answer session, we found out he was able to sell his score to a video gaming company for a tidy profit.”

“Our students have typically presented at more discipline-specific conferences; having access to the broad array of research topics was fascinating. One of our humanities faculty who accompanied his mentee indicated that the conference had given him a whole new perspective on the possibilities for undergraduate research in the humanities.”

“This conference went above and beyond my expectations in every way. The student presentations, both oral and poster, are high quality. I have learned something from each one. There is lots of energy at the conference.”

Conclusion

Students, faculty members, and administrators indicate they gain personally and professionally from attending the NCUR conference. It serves an important function in generating ideas for future research, networking, and in helping students hone their communication skills. It is clear from faculty and student comments that the multidisciplinary nature of the event often causes students to re-examine their work and how they talk about it as they receive feedback from their peers in different academic fields. It can provide a capstone experience for a student's undergraduate research.

Because NCUR is open to presentations from students in all academic fields, it may provide the only national outlet for some students to disseminate their work. Although most of the science and engineering professional societies schedule sessions for undergraduates at their annual meetings, others do not (for example, classical studies, nursing). And, even though some disciplines invite undergraduates to present their work, they limit undergraduates' presentations to the poster format. NCUR allows undergraduates to present in a variety of ways, allowing students to further hone their communications skills.

NCUR's role in exposing students to the broad array of scholarship across many academic fields is critical to a student's liberal-arts education. Because of its national scale, faculty members have the opportunity to compare their students' experiences with that of students from across the nation (and sometimes internationally).

Because the host site of NCUR changes from year to year, the number and geographical location of the graduate schools represented at the graduate fair varies, allowing repeat faculty and administrative attendees to learn about a wide variety of graduate programs, which can inform the discussions they have with their students about graduate-school opportunities.

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